



Safe Water Quality for All Uses:

Promoting science-based policy responses to water quality challenges

Geographical scope/benefitting country(ies):	Global (with specific focus on developing countries and Africa for some of the proposed themes)
Duration (in months):	24 months
Name and Unit of Project Officer	Blanca Jimenez Cisneros, Director, Division of Water Sciences of UNESCO Sarantuyaa Zandaryaa, Programme Specialist, Division of Water Sciences of UNESCO
Partner(s) institutions:	UNESCO category 2 water centres and Chairs that focus on water quality aspects
Total estimated budget inclusive of Programme Support costs	US\$ 2,500,000

Rationale and background

The project aims to inform policy-makers and practitioners both within and outside the water sector on critical linkages of water quality with other development challenges such as health, poverty, gender inequality, environmental degradation, and food security with the ultimate objective of raising the profile of water quality issues on national and global development agendas and encouraging governments and development agencies to incorporate water quality policies into national and international development goals.

In developing countries, water quality problems are severe. Wastewater treatment coverage is a common challenge, in addition to the lack of access to sanitation for large portions of their populations. The situation is even more serious in countries where there are no programmes and policies to protect the sources of water supplies from diffuse pollution such as agricultural runoff. Furthermore, the lack of proper procedures to ensure the safety of potable water and other water and wastewater uses is often at the origin of high human morbidity and mortality rates and environmental degradation in developing countries. These water quality problems are not only a major challenge facing developing countries, but are relevant also to developed countries which have achieved a high level of wastewater treatment because the existing water quality programmes are inadequate to deal with water quality issues such as emerging pollutants.

Water quality problems remain serious and unaddressed, notably in developing countries due to the lack of political will and the lack of awareness of policy-makers on critical linkages of water quality with other development challenges such as health, poverty, gender inequality, environmental degradation, and food security. Consequently, there is a crucial need concerning water quality to create awareness at the political level and promote science-based policies, especially in developing countries and economies in transition, to encourage governments to take action to address pressing challenges and to incorporate such policies into national development goals. This awareness raising will target the highest decision-making level, including heads of states, presidents, prime ministers, and ministers of water, environment, finance, agriculture, economy and development, as well as policy-makers at the regional and local levels because some water policies are developed and implemented at these levels.

Why UNESCO?

Within the UN system, UNESCO is uniquely positioned to bring science and expertise to address issues related to the integral and sustainable management of water resources. UNESCO's experience in water sciences started in the 1950s and 1960s, when it began to address global water problems and the implementation of the International Hydrological Decade 1965-1974. The International Hydrological Programme (IHP) of UNESCO, created in 1975, is the only intergovernmental scientific programme on water in the UN system.

As the leading UN agency with the mandate on sciences and education, UNESCO works to build the scientific knowledge base to help countries manage their water resources sustainably. This work is facilitated by the mandate of the organization, its multi-disciplinary staff, its procedures to work transversally and its worldwide presence. The IHP activities are implemented through its network of IHP National Committees, a network of water-related centres and a large international community of water-related scientific and professional associations, water scientists, researchers and practitioners. The definition of focused activities under specific themes in time-bound phases through a comprehensive consultative process with IHP National Committees in 168 countries, international scientific associations

and other UN organizations also ensures IHP's continuous relevance to global and local priorities in the field of water.

Bringing together the IHP, the World Water Assessment Programme (WWAP), the UNESCO-IHE Institute for Water Education, 28 affiliated water centres and over 30 water-related UNESCO Chairs and UNITWIN around the world (the UNESCO water family), UNESCO's scientific expertise is the most valuable contribution of the organization towards addressing global water challenges and ensures that IHP activities remain relevant to the needs and priorities of its Member States to tackle water problems. Through these extensive networks, UNESCO is capable of engaging high level scientific expertise in various water-related disciplines and implementing programmes and projects to develop sound solutions to address water issues at the global, country, regional and local levels. UNESCO's leadership in the field of freshwater has been considered by an independent external evaluation as the "the leading United Nations agency for water" and its IHP as the most influential international programme on water.

Water quality is one of its key IHP thematic areas of UNESCO. During the seventh phase of IHP (IHP-VII, 2008-2013), water quality issues were addressed by implementing targeted activities with a renewed focus on "Protecting water quality for sustainable livelihoods and poverty reduction". This has brought water quality issues to the forefront of IHP activities and has led to the prioritization of water quality as one of the main themes of the eighth phase of IHP (IHP-VIII, 2014-2021). The UNESCO-IHP International Initiative on Water Quality, which was established by the 20th session of the IHP Intergovernmental Council of UNESCO, provides a platform to mobilize and promote scientific knowledge, research and policies to respond to water quality challenges towards ensuring water security for sustainable development.

Overall Goal/Objective

The overall goal of the project is raise the profile of water quality issues on national and global development agendas and encourage governments and development agencies to incorporate water quality into national and international development goals by raising the awareness of policy-makers and practitioners both within and outside the water sector on critical linkages of water quality with other development challenges such as health, poverty, gender inequality, environmental degradation, and food security.

The specific objectives of the project include:

First, to promote science-based policies on water quality, including access to safe drinking water and sanitation, and wastewater management, by disseminating knowledge and information at the highest political and decision making levels on policy and technical approaches to address these water quality challenges with the consideration of the latest scientific innovations and technological developments and their adaption in local conditions, while strengthening local knowledge and building local scientific networks. To this end, the project aims producing a series of policy and technical briefings on water quality issues oriented to policy makers of water and other relevant sectors. These policy and technical briefing documents will be tailored especially for policy makers of non-water sectors in an easy to understand and informative way in at least five UN languages and will be disseminated in a way that ensures the widest possible public access and that is quickly and easily accessible (for example, in an electronic format such as e-Briefings).

Second, to improve water quality management at the global, regional, national and local levels by strengthening capacities to develop policies and strategies to tackle water quality problems through measures that are technically and economically feasible and hence

sustainable. These policies and strategies will promote an holistic approach to water quality, aimed at ensuring the safety and quality of water supplies and of all other uses of water and wastewater, protecting and restoring the quality of water resources, reducing health risks and environmental pollution from lack of sanitation and inappropriate wastewater management, and preventing the loss of ecosystem goods and services caused by poor water quality. Specific emphasis will be put on mainstreaming gender equality in water and wastewater policies in order to improve health, wellbeing, education, and income opportunities of women and girls through improved access to safe drinking water and sanitation and better water quality for domestic and agricultural uses. In this context, the project aims at: (i) facilitating high-level science-policy regional fora on water quality policies; and (ii) testing and piloting the development of multi-sectoral strategies on improving water quality through a multi-stakeholder participatory approach.

Given the focus on improving water quality and wastewater policy and its incorporation in the national and global development agenda, the project will be of particular relevance to the post-2015 development agenda and future Sustainable Development Goals (SDGs). It will support countries in aligning national development agenda and policies with the post-2015 development agenda and SDGs, especially taking into consideration the importance of improving water quality and wastewater management as a potential target area under the SDGs.

Main expected results

The main expected result of the project: Policies and strategies to improve water quality are embedded in national and international development agendas through increased awareness of political decision-makers on water quality issues and the development of multi-sectoral responses to access to safe drinking water and sanitation, and wastewater management, taking into account their linkages with other development challenges such as health, poverty, gender inequality, environmental degradation and food security.

This main expected result of the project will be supported by the following specific results:

Expected result 1: Policy responses and science-based policy-making promoted to address issues related to access to safe drinking water and sanitation, water quality and wastewater management.

Expected result 2: Water quality management improved at the global, regional, national and local levels, through pilot demonstrations of multi-sectoral strategies.

Activities and outputs/deliverables relating to the achievement of expected results

In order to achieve the main goal and specific objectives of the project and relevant expected results, the project will carry out the following activities under two main components:

Activity component 1: Awareness raising of policy-makers on water quality, including access to water and sanitation and wastewater management.

Activity 1.1: Development and dissemination of technical and policy briefs on main water quality issues

Outputs/deliverables: Five series of technical and policy briefs on the following main themes, with 10-20 policy briefs on relevant topics and 'success stories' in each series in all UN languages made available as e-briefings through UNESCO websites and in a limited number of print copies for specific targeted distribution:

- safe drinking water and water supply
- sanitation
- water quality management to protect ecosystems services
- wastewater management and reuse, including industrial (re)uses of water
- controlling risks from emerging chemical and biological pollutants, which is an issue of relevance to both developed and developing countries

Activity component 2: Strengthening the policy capacity and policy-setting process on water quality and wastewater through technically and economically feasible measures, with specific pilot demonstrations in developing countries

Activity 2.1: Organization of regional high-level fora on water quality in both developed and developing regions (namely, Africa, Arab States, Asia and the Pacific, Eastern and Central Europe, Latin America, and Western Europe and North America), bringing together Ministers of water and other relevant sectors such as health, agriculture, urban development, finance and science and technology.

Outputs/deliverables: Regional high-level science-policy fora on water quality in six regions with recommendations for science-based policy making to address water quality issues specific to the priorities and needs of different regions.

Activity 2.2: Pilot demonstration of the development of multi-sectoral strategies on improving water quality through a multi-stakeholder participatory approach in three developing countries in Africa, Asia and Latin America.

Outputs/deliverables: Multi-sectoral and integrated water quality strategies developed in three selected countries in Africa, Asia and Latin America with concrete measures that are technically and economically feasible aimed at ensuring the quality of water supplies and of all other uses of water and wastewater, protecting and restoring the quality of water resources, reducing health risks and environmental pollution from lack of sanitation and inappropriate wastewater management, and preventing the loss of ecosystem goods and services caused by poor water quality.

Beneficiaries and stakeholders

Primary direct beneficiaries of the project will be the main segment of the population suffering from water-borne diseases caused by lack of access to safe water and sanitation and the poor whose health, well-being and livelihoods depend on water in various ways. Among them, women, elderly and children will be the main focus beneficiaries. These vulnerable groups are not only most at risk of health problems associated with poor water quality, but their educational, economic and personal development opportunities are affected by lack of access to safe water and sanitation. Special emphasis will be put on gender equality and women because they are the ones responsible for fetching water for household and farm uses and who often take care of sick people at home and also girls' educational enrolment and outcomes are affected by lack of sanitation at schools.

Other beneficiaries and stakeholders benefitting from the project will include urban residents and farmers as a result of improved quality of water resources that are used as sources of municipal water supplies and agricultural irrigation. Furthermore, improved water quality and

wastewater management and the safe (re)use of wastewater will augment the availability of water resources for different uses, especially in water scarce regions. Water quality improvements will also improve the availability of water resources at the local and country levels for all uses and users because of the improvement of its quality and a reduction in costs associated with the treatment and use of water.

Another major direct beneficiary of the project will be ecosystems because water quality directly affects the functioning and health of ecosystems and the supply of ecosystem services. Hence, improved water quality and wastewater management will result in enhanced ecosystem health and increased ecosystem services. Water quality improvements will indirectly benefit the economic development of countries as a consequence of enhanced ecosystem goods and services.

The impact of the project is expected to be global with significant improvements in the science-policy interface on water quality and wastewater management in both developing and developed countries.

Implementation strategy

The activities of the proposed project will be implemented by the UNESCO water family. The implementation of the project will be coordinated by the Division of Water Sciences of UNESCO which is the Secretariat of the IHP.

The local expertise in the countries will be used, where available and appropriate, in project activities, such as the development technical and policy briefs, the review of the content and the translation of papers into other languages. An international scientific review committee will be established for each of the thematic series of the technical and policy briefs, which will bring together leading international experts on water quality and in related areas.

As the policy briefs are intended to promote science-based integrated policy responses, issues related to policy, legal and technological aspects of water quality will be included in each of the policy briefs. Reflecting the linkages of water quality to other development challenges, the policy briefs will also include topics not only of direct relevance to water and sanitation, water quality and wastewater issues, but also other issues related to water such as health, poverty, gender equality, environment, and food security. The policy briefs will be disseminated electronically through the UNESCO web site in all UN languages. They will mainly focus on issues of particular relevance to developing countries because of the severity of water quality and pollution problems facing them. Emerging water quality issues and innovative approaches such as nanotechnologies, which are of relevance to developed countries, will also be addressed.

In order to influence policy makers and promote a science-based policy making on water quality, the technical and policy briefs will be presented and discussed at six regional high-level science-policy fora, which will bring together ministers and high-level officers of both the water sector and non-water sectors such as health, agriculture, environment, finance and urban development. These multi-stakeholder fora will also provide an opportunity to reflect and discuss the specific priorities and needs of different regions and countries.

To test and demonstrate multi-sectoral strategies on water quality, three developing countries from three regions (Africa, Asia and Latin America) will be selected to carry out a pilot study on the development of multi-sectoral and integrated strategies on water quality with the participation of all relevant stakeholders from the water sector and other relevant sectors.

The project will be implemented with contributions from relevant environmental science programmes of UNESCO such as the Man and the Biosphere Programme and UNESCO regional offices. UNESCO regional hydrologists and science officers in the regions will be involved in the project to mobilize the local scientific expertise and identify key stakeholders to be involved the project activities, as well as to identify the specific regional and local priorities and needs related to water quality.

UNESCO Chairs on water and women will be involved in the development technical and policy briefs on issues related to gender equality. In addition, gender specialists will be involved in the preparation and review of these briefings The UNESCO Gender Equality focal points in the programme division and sector, as well as the Division of Gender Equality, will also be consulted for advice and contributions.

Sustainability and exit strategy

Once the awareness of high-level policy makers on water quality issues is raised in a country, a clear political will should emerge. The science-policy interface is key to ensuring that science informs better policy decisions. This should lead to concrete action to protect water quality and address related challenges.

The dissemination of the technical and policy briefs in an readily accessible format through the UNESCO website will also allow further dissemination and use of these knowledge and information materials by other stakeholders. These knowledge materials will continue to be disseminated through the UNESCO website even after the funding for the project has ended.

The development of national multi-sectoral water quality strategies in the three pilot countries will provide a concrete demonstration and example for its replication in other countries. Hence, the project results can be sustained after the project has ended and lessons learnt disseminated to other countries.

As part of this proposal the revision of an updated edition of the influential book by Richard Feachem is being discussed with the Bill and Melinda Gates Foundation in coordination with Michigan State University. Through this effort, the team of experts that will be created will be available to contribute to the development of policy briefs on water supply and sanitation and management of emerging microbial risks.